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MASS CHILD FEEDING IN GERMANY

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During the war the food supply in Germany had grown less and less. By 1917, the allowance for a grown person amounted approximately to 1100 calories a day. Starling, in the "Feeding of Nations" gives 3400 calories as the net requirement for an average man, and 2400 for the average woman. In many instances the government ration was supplemented by "schleichhandel" or smuggled food. The rank and file, however, could not make use of schleichhandel indefinitely, owing to the cost of the illegal food and the dangers involved in getting it. Anaemia, rickets, tuberculosis, and other manifestations of undernourishment had grown to such proportions in 1919 that immediate help was needed. Mr. Hoover asked the American Friends to organize mass feeding in Germany, and gave food and funds sufficient to carry on such program until the harvest of 1920. It was possible to continue and extend the work after this period by voluntary contributions from America, by food allocations and money from the American Relief Administration, from the European Children's Fund, and the German government.

The food is similar to that used by the American Relief Administration for mass child feeding in other countries and is purchased in America. It is concentrated, transportable, durable material, such as lard, cocoa, evaporated milk, rice, beans, peas, sugar, and wheat flour. Since October, 1920, the German government has provided the sugar and flour. Lard has been replaced by vegetable fat, and peas have been omitted from the ration. The amount of food for a day's ration is based on the food value of a liter of milk. School children from 6 to 14 years of age receive 100 per cent or 667 calories;[1] expectant and nursing mothers and also apprentices up to 18 years of age, 120 per cent or 800 calories; and

[1]For the winter of 1921–1922 the ration is 590 calories.

children below school age, 60 per cent or 400 calories. The food is given in the form of bread and soup. The quantity of soup has gradually been reduced to ½ liter in order to restore to normal capacity the children's digestive organs, which had been distended by poor food.

In order that the meal should serve as a supplement to the home food and not as a substitute for it, we have found that the most satisfactory time for the feeding is between 9.30 and 10.30 a.m. Such an hour does not interfere with the main meals of the day; the attendance is more regular; the actual gain in weight and height has been greater where it has been possible to put the feeding at this hour. Where this could not be done, we have recommended 4 p.m. though this hour has drawbacks in the winter days when it begins to grow dark soon after 3.30 or if, after being dismissed from school, the children need to return again for the feeding. No food is taken home. To prevent food from being left over, owing to absences which average 3 to 5 per cent a day, from 3 to 5 per cent more children than the allotment are admitted. On one occasion when we visited one of the feeding centers we saw a child almost disappearing head downward into one of the 50 liter thermos kettles. When the little head reappeared above the brim, we asked the child why she was scraping out the kettle so vigorously. She answered: "I am the official licker. The doctor said I must have Quaker food, too, but there was no room for me, so I am allowed to come every day to lick out the cans."

A cook book especially compiled for the use of the 7 food materials of the ration is in all kitchens. The menus are arranged to meet the needs of small kitchens, semi-large kitchens, and large central kitchens. Those in which 50 to 500 portions are prepared daily can have greater variety than those in which 20,000 to 35,000 portions are prepared. Semi-large kitchens, in which coal or gas is available in addition to the steam kettles, can vary the menu. By substitute recipes the menus are adjusted to meet the differences in taste and method of cooking in various sections of the country. The following menus illustrate those in cook book IIIa for the use of ration IIIa in large central kitchens:

Allowance

	Vegetable fat	Cocoa	Sugar	Evaporated milk	Rice	Flour	Beans
Weekly food in grams...	65	18	130	227	112	405	85
Calories.....	575	80	507	386	370	1357	271

Menus and recipes

DAY	MENU	MATERIAL	GRAMS PER PORTION	CALORIES	TOTAL CALORIES
	Cocoa	cocoa	9.0		
		sugar	40.0		
		milk	61.0		
		flour	15.0		
Monday		salt	1.0	350	
	with rolls	fat	6.0		
		sugar	6.0		
		flour	50.0		
		salt	0.6	224	594
	Vegetable	fat	15.0		
	Rice	rice	56.0		
		salt	3.5		
		onions	5.0	318	
Tuesday	with rolls	fat	6.0		
		sugar	6.0		
		flour	50.0		
		salt	0.6	244	562
	Milk	fat	9.0		
	Soup	milk	50.0		
		flour	65.0		
		salt	3.5	388	
Wednesday	with rolls	fat	6.0		
		sugar	6.0		
		flour	50.0		
		salt	0.6	244	627
Thursday	Same as Monday				594
	Milk	sugar	14.0		
	Rice	milk	55.0		
		rice	56.0		
		salt	2.5	333	
Friday	with rolls	fat	6.0		
		sugar	6.0		
		flour	50.0		
		salt	0.6	244	577
	Bean soup	fat	5.0		
		flour	10.0		
		beans	85.0		
		salt	4.5	348	
Saturday	with rolls	fat	6.0		
		sugar	6.0		
		flour	50.0		
		salt	0.6	244	592
Total					3546

The mothers and children are examined for the feeding by physicians, according to regulations formulated by leading German child specialists. All school children are weighed, measured, and grouped in three classes according to their state of nourishment. Those in class I are normal, class II need help but are not yet in danger, and those in class III are seriously undernourished. The children selected for the feeding come from class III, regardless of their families' social, religious, or political status. Experience has taught us that at least three months of uninterrupted feeding are necessary to obtain any lasting recovery from serious undernourishment and even then comparatively few cases can be dropped at the end of the first three months.

To meet local problems efficiently and to understand the conditions in different parts of the country, Germany was divided into 9 administrative districts with one or more American leaders in each. These leaders, all volunteer workers, organized German committees who carry out the actual work and are responsible for all details of the feeding. They visit the cities, kitchens, and feeding centers from time to time to get in touch with the workers and children, and to see that the work is being carried out satisfactorily. A system of reports accounts for the food from the time it enters Germany until it is eaten; weekly records are kept of the number of mothers, apprentices, school children, and children below school age. The reports are sent from every community to the district office which in turn reports to headquarters in Berlin.

District I comprises the industrial territory of the Rhine and Ruhr. It is a densely populated mining section, part of which is at present occupied by Belgian and French troops. The office is in the city of Essen.

District II is territory occupied by the English and the feeding is carried on by the English Friends. The office is at Cologne.

District III is the great export center of Germany and includes the seaport cities of Hamburg, Luebeck, and Bremen. The office and shipping department from which the food is transported to all parts of Germany is at Hamburg.

District IV includes part of Prussia and the Prussian provinces; it stretches to the Polish corridor and beyond to the territory of East Prussia. The central administrative offices and the district office are located in Berlin.

District V has its headquarters at Weimar, and includes Thuringia and part of Saxony. In this section toys, porcelain and optical goods are made.

District VI has its office at Frankfurt and includes the middle and southern sections of Germany, and French occupied territory in the Saar-Valley, Pfalz, and along the Rhine. It is the main center of the dyeing industry. Oppau, the scene of the chemical disaster, is located in this district.

District VII with headquarters in Dresden is the great home industry section. Cluny lace and five-sixths of the toys of the world are made here.

District VIII with headquarters at Breslau includes Silesia which is also a great industrial center.

District IX with headquarters at Munich is the agricultural section of south Germany.

No attempt was made during the first feeding period to reach cities of less than 50,000. Since then feeding has spread throughout the land into all places, where, according to statistics, the insufficient food supply had increased disease and mortality to such an extent that the health of the children of the whole community was in danger. By June, 1921, 1,010,000 mothers and children were being fed every day in 1640 cities, towns, and villages. The cooking was prepared in 2271 kitchens and served in 8364 feeding centers. At this time the highest point in the feeding figures was reached. The average number fed during the year, from October, 1920, to the harvest of 1921, was 700,000, the low point being reached during the holidays when the feeding was carried on only in institutions. The $3,000,000 campaign conducted in America by Americans of German birth has assured the feeding of 500,000 until the harvest of 1922.

The question in the mind of the reader will probably be: "Why is further relief necessary, when so much has already been done?" Could you look into the homes, or observe the crowds going to work in the morning or returning in the evening, or see people purchasing food at the markets, you would get an idea of the low standard of nutrition and living. Recently I saw in one of the residential sections of Berlin a line of women of the middle class, corresponding in America to wives of professors or small business men, purchasing potato parings for food. Foreigners who see only the surface of life here, who come to buy articles of luxury or food and clothing because the depreciated mark makes them cheaper than in their own countries, do not see what is happening; they do not grasp the struggle to cope with the depreciating currency, the increase in the cost of living and the inadequate wages.

People whose income has not increased since 1914, and there are many such especially among professors, teachers, and widows whose only source of income is a pension, are living chiefly on a carbohydrate diet. Food which we have grown to consider an essential part of a well balanced diet is beyond their means. To them milk at 3.45 marks a liter,[2] if it could be had, is prohibitive. Such prices as 36 marks a pound for butter, 28 marks a pound for margarine, 12 marks a pound for beef, 10 marks a pound for fish, limit the diet to potatoes, oatmeal, flour, soup, and bread, with "wurst," herring, or cheese for protein.

The German government, realizing that further help for undernourished children will be needed for several years, is incorporating

[2] At present, January, 1922, a liter of milk in Berlin costs 6.20 marks.

the feeding of needy children as part of its social welfare work. The Friends are leaving Germany because of the greater need in Russia; some American members, however, will remain in Germany as long as there are funds for the distribution of which the Friends are responsible.

The German people have shown their appreciation of this help in a time of need. It had a deeper meaning to them than the gaining of weight and height, or relieving tense white faces of strain, or making crooked little legs more sturdy. Something greater than gratitude has found its way into the hearts of the little children. If they are given an opportunity to develop the spirit which was expressed by the little girl in Upper Silesia who said, "I hope you are feeding the hungry Polish children too," Europe may yet find that good will among neighbors is possible.

RECENT DEVELOPMENTS IN THE SCOURING AND BLEACHING OF COTTON

A Review of the Literature for the Years 1920 and 1921

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Scouring. The first process in the bleaching of cotton is the boiling out or scouring. The fatty and waxy coating of the cotton fiber is water repellent and must be removed before either bleaching or dyeing, or "spotty" goods will be the result, due to uneven absorption. The impurities amount to from four to five per cent of the weight of the cotton and are pectin bodies, wax, oil, albuminous matter, and mineral substances. Scouring is usually done in at least two boils. The first is either a lime boil using milk of lime, or soda ash with or without resin soap; intermediate is an acid bath or "sour," and a soda boil follows.

Alkalies do not affect cotton unless of a concentration sufficient to cause a mercerizing effect. This will not take place in the boil liquors unless the solution becomes concentrated by evaporation or a new solution is added to the stock liquor after the material is in the kier and a concentrated solution thus comes directly in contact with some of the material. In case hard water is used, magnesium and calcium salts are formed which cause a harshness in the textile and perhaps some loss in strength. It is claimed that soft water will

remove 23 per cent more of the fatty matters than will hard water in the same process. No harm to the goods can be detected if the ordinary precautions are taken, especially the exclusion of air or any oxidizing agent. Air will cause the formation of so-called oxy-cellulose, resulting in a weakened condition of the fiber and a greater absorptive power for dyes in the spots so affected. To reduce the oxidizing effect in the kier various substances have been recommended such as sodium sulfite, which has been used with good results on strength. When air is excluded the pressure and temperature can be run higher, thus shortening the time.

So-called "fat lime" has a small amount of magnesia and silica in it. It should be run through a sieve so that no large particles will come in contact with the material, as these will burn the cotton. "Chemical lime" which is much advocated, is in powder form and, though it is more expensive, there are no large lumps to settle on the goods.

The lime boil takes from eight to ten hours, depending on the pressure and temperature used. The liquor must be run off quickly and the washing done rapidly and thoroughly or the lime will dry on the goods. The fats and greases are decomposed and insoluble lime soaps are formed, which are subsequently removed in the acid sours. Some of the new kiers supply an outside circulation of the liquor. Efficient circulation shortens the time of boiling and gives more even results.

Warp threads are sized, usually with starch, to prevent roughening-up in the weaving into cloth. This starch has to be removed for the same reasons and by the same means as the other impurities. A simple and very neat method of removing starch and gummy and pectin substances, is the employment of an enzyme, a diastase product, to render starch soluble. This method is used in laundries and in various industrial processes. From two to four per cent malt extract solution and a steep over night at 120°F. render the starch soluble; raising the temperature to 180°F. stops the digestive action of the enzyme. The determination of the Lintner value has been the test used for the power of the extract, but the Lintner value does not give the liquefying power of the extract, and this is what the bleacher needs to know. This knowledge can best be obtained from trial strips of goods in test solutions. Malt extract gives an easily soluble reagent, immediately ready for use, with rapid solvent action, and no harmful effect on the fiber or on dyes; and the use of it decreases the severity of the alkali boil.

If colored yarns are present in the material to be boiled out and bleached, certain modifications in the processes are necessary. Soda ash is safer and fairly effective when used in place of caustic soda. Sometimes a mixture of a small amount of caustic soda with a larger amount of soda ash is used satisfactorily. Matthews gives a table of the dyes in ordinary use and their fastness to boiling out and bleaching. It is sometimes necessary to limit or even

entirely omit the alkali boil, using soap scouring instead. It is claimed that the use of oxidizing agents such as sodium peroxide, potassium dichromate, potassium permanganate or perborate have advantages in counteracting the reducing action of the warp sizing materials on dyed cottons. These are not in use commercially, hence are probably not very successful. There is an exception, in that, when some bleaching is required in one operation with the boil, peroxide is used.

To the uninitiated, soap would appear to be the recognized scouring agent, but soap is more expensive and is only substituted for the alkali when the regular process is modified for some reason. The principal value of soap is for use with hard water, where insoluble soaps would be precipitated on the addition of alkali. Turkey-red oil and acid soaps are used to form more stable emulsions to prevent precipitation with hard water. Soap is not now used as it was formerly, largely on account of cost, but also because it may leave some yellow color if heated at too high a temperature.

The use of volatile solvents for the extraction of fat, wax, and oil has been advocated but such extraction does not entirely take the place of the alkali scouring. From some standpoints it would be an ideal method; for one reason there could be no possible deleterious effect on the fiber. However, the necessity of some alkali treatment, the cost of special plant and treatment, danger of fire with certain solvents, and the fact that the advantages do not seem to be commensurate with the extra cost and trouble make it doubtful if this method will be generally adopted. Solvent extraction has been successfully used where cotton and linen are to be finished with a high linen finish and where dyed materials are to be scoured.

After the lime boil and a cold rinsing the goods are treated with an acid bath called the "gray sour," or "lime sour," to remove lime compounds. Hydrochloric acid is preferable since the reaction with lime soaps gives soluble chlorides, whereas sulfuric acid yields more insoluble sulfates. This is usually done in the cold, though warming will decrease the amount of acid and save time.

A second boil, in case this boil is included, is in soda ash or a mixture of the soda with caustic soda. The use of pressure reduces the time of boiling from one-half to one-third. Resin soap is not so generally included here as was formerly the custom. Resin forms insoluble resinates with calcium and magnesium of hard water and even when distilled water is used the resin substances are hard to remove from the material. If resin soap is used there is a second soda ash boil and another washing.

The caustic soda boil, the liquor of which is usually from two to five per cent in strength, is shorter and less complicated than the above. If properly done the goods will show an increase in breaking strength, probably largely because of shrinkage. Oils are used with caustic because of their solvent action on

the cotton wax and the lime soaps which may have adhered to the fabric. The boil-out is quicker and the fiber has a soft feel, whereas the use of caustic alone leaves a harsh feel.

In 1918 Knecht and Hall did some work on the composition of the residual liquors from the alkaline boils, determining where the various impurities were removed. Much remains to be done on the composition of these liquors to establish possibilities of their further use or recovery.

Chemists are not agreed as to the advantages of using a lime boil nor on the number of soda boils. Darling and others claim one lime boil with one soda ash boil to be sufficient. Julius gives a method for the use of a single boil in a mixture of soda ash and caustic by previous use of enxyme, but does not recommend this shorter method when a good bleach is desired. The original use of the various boils was largely empirical but chemists have not materially altered the old processes.

Bleachers have considered it more difficult to obtain a uniform composition in commercial lime than in soda ash or caustic, and some of the discouragement of the use of the lime boil has come from that source. It has been claimed that lime sometimes contains sufficient iron to leave stains on the goods. Darling investigated lime of different grades, determined the amount of iron present and the amount necessary to cause trouble, and made recommendations as to specifications in purchasing. He has concluded that the amount of iron present is harmless and that iron from poorly lined kiers is much more dangerous than the iron contained in the lime. The lime boil still appears to be the best method of removing the waxes and pectin matters.

In order to save time, or, in the bleaching of colored fabrics as striped goods, where scouring may prove more detrimental to the dyes than the bleaching proper, the boiling-out may be much modified or practically omitted. Colored goods may be treated with diastofor (or other enzyme preparation), washed in hot water or in hot dilute soap liquor which may or may nor have soda ash in it, and bleached. In case indigo is present in the colored goods the reducing action of the dressing materials may cause loss of color and the enzyme treatment will remove the dressing without harm to the dye. A British patent gives for colored goods a method of solvent extraction of the natural wax and oil from the fiber and a moderation of the alkali boil, claiming a better bleach than without the solvent action. The expense has prevented the wide spread use of solvent extraction.

It is claimed a boil in soda ash and Turkey-red oil followed by bleaching will result in much less loss in weight. Higgins found that two such boils with a subsequent bleach used five times as much bleaching powder as the ordinary process, with the result that impurities still on the fibers gave the greater weight, and the linen used in this experiment was still yellow and unsuitable for market. He concludes that a thorough scouring is the cheapest way to obtain a good white.

Bleachers sometimes allow the scoured material to cool in the kiers. Many impurities removed by the hot lye will be reabsorbed from the solution upon cooling.

Properly scoured cloth does not have a great amount of coloring matter left in it; therefore there is little work for the "chemic" as the bleach liquor is called.

Bleaching. Bleaching powder still remains as the chief oxidizing agent in bleaching cotton. Hydrogen peroxide is valuable where chlorine will cause injury to the fiber as when cotton is mixed with wool or silk. Sodium and hydrogen peroxide and sodium perborate have had but limited use in cotton bleaching because of their higher cost; especially is that true of the perborate. Perborate will mix with soap and washing powders but because of expense has not been extensively used in bleaching or in laundry preparations. Considerable advertising is being given to peroxide bleaching. If properly controlled a steady liberation of oxygen throughout the entire material can be obtained by changes of temperature or by adding acid or alkali. It is claimed that oxygen bleached materials show remarkable softness, elasticity, brilliancy, strength, and life, and a permanent white. Peroxide manufacturers claim peroxide bleaching shortens the time to one-third that of the usual process.

In bleaching, the goods are left in the bleaching solution until the coloring matter is entirely or practically gone, then rinsed, and put into the hydrochloric acid solution, where any remaining basic calcium compounds are removed. The bleaching effect is due to the hypochlorous acid which gives up oxygen directly, and the by-product is hydrochloric acid. Sodium hypochlorite, prepared from liquid chlorine and alkali, from bleaching powder and alkali, or from electrolysis of salt, is more soluble than bleaching powder and liberates more hypochlorous acid. However, it is more expensive. If the calcium compound is carefully dissolved there will be no particles to settle on the cloth and less waste than is too frequently the case. Heat, alkali, and the sun's rays all decrease the stability of the bleaching powder, thereby increasing the bleaching action. It is claimed that the presence of common salt as in electrolytic liquor, stimulates the action. This has been shown to be an initial effect and the final result to be the same with or without the salt.

If bleaching is done too rapidly the time is insufficient to allow thorough penetration into the fiber and the bleaching is superficial, whereas too slow a bleaching action will permit the oxidizing agent to attack the cellulose, presumably forming oxycellulose. The present tendency is toward as much reduction of time as possible. One method (Brin Oxygen Company) subjects the material to the action of chlorine in the presence of oxygen. Gaseous chlorine or hypochlorite of lime may be used. Schreiner's ozonized turpentine method is interesting. It has been found that metallic oxides of copper, iron, cobalt, manganese, and chromium accelerate the evolution of oxygen from bleaching powder solutions.

The use of chlorine gas in water is being advocated. A solution of chlorine yields HOCl and HCl. The reaction is reversible. The addition of calcium carbonate increases the bleaching properties by removing the HCl formed. The HOCl yields oxygen and HCl. The presence of small amounts of HCl in bleaching liquors increases the bleaching action. An excess of HCl gives an excess of free chlorine and a weak bleaching solution, *i.e.*, reverses the above equation. The further addition of calcium carbonate removes the HCl and again increases the bleaching action.

As a source of sodium hypochlorite, chlorine gas is run into a cold solution of caustic soda or soda ash until saturated. Chlorine gas is a by-product in the electrolysis of salt in the manufacture of caustic soda. The gas is dried, liquefied, and put into steel cylinders. Considerable information is being published on the uses and methods of handling liquid chlorine and chlorine gas. Liquid chlorine and soda ash or waste caustic soda liquors recovered from mercerizing can be made up into clear liquors ready for immediate use and under constant control of the bleaching strength, whereas chloride of lime loses strength on exposure and deposits a heavy sludge when dissolved. In such a solution there are no lime salts present as in chloride of lime and there is no danger of tendering and discoloring the goods from the adhering of particles of lime. This method of bleaching has recently come into extensive use, its nicety and efficiency making a strong appeal though the cost of installation is high.

Electrolytic bleach liquors are prepared by the action of the electric current on a solution of common salt, forming a sodium hypochlorite solution. Great claims have been made for this bleach but actual bleaching tests carried out with sodium hypochlorite solutions made from bleaching powder and soda ash, from liquid chlorine and soda ash, and from electrolytic liquor, all show practically the same bleaching effect for the same content of available chlorine. The process requires greater attention than does the dissolving of bleaching powder, and the cost depends on the initial cost of the salt and of the current. Higgins makes the statement that no electrolyzer will give a solution strong enough for ordinary bleaching. This method has proved successful in small scale operations, as laundries, but Matthews considers liquid chlorine more satisfactory and less costly.

The strengths of bleaching liquors have been tested by means of an hydrometer. The same is true of the control of the concentration of most of the baths in use in scouring and bleaching. More modern methods are being introduced, for the specific gravity as measured by the hydrometer is but very roughly a register of the amount of available chlorine or the strength of any of the solutions.[1]

[1] For a complete consideration of the processes included in the operations of scouring and bleaching, reference should be made to text books, such as "Bleaching and Related Processes" by Matthews. "Bleaching" by Higgins is a review of the researches on scouring and bleaching between 1908 and 1920, being largely an account of the author's own work.

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A COURSE IN MARKETING

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Recent developments in the food situation have led to a more intensive study of the production and distribution of food products. By means of the revised course in Marketing, the Home Economics division at Iowa State College is aiming to make the future housewives of Iowa realize their responsibility as buyers of food stuffs, by giving them a practical knowledge of market conditions. The term "marketing" presents two ideas. The older one is that of the housewife going to the market with her basket to secure the family rations. "Marketing" as now used in commerce and trade, carries the larger idea of getting the products from producer to consumer. It is believed that the problems of consumer and producer can be solved only by a clearer understanding of these two ideas included in the broad term "marketing."

The course in marketing consists of a one hour lecture period and two three hour laboratory periods each week for one quarter. In the laboratory, a study is made of specific foods. In order that the information may be in condensed form, special charts for each type of food are filled out in class. For example, two lessons are spent on vegetables, using the following chart:

Vegetables

NAME	PART USED	SEASON	POINTS IN CHOICE	PRICE	AMOUNT TO BUY FOR SIX	STORAGE	VALUE	USE
.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....

Illustrative material consists of fresh vegetables where possible. The work with potatoes illustrates the type of problem. Potatoes grown and found in Iowa markets are shown[1] and cut to test for black heart rot, black ring, freezing, scab, and other defects. They are boiled, baked, and mashed to note characteristic cooking properties. The selection of winter storage potatoes is discussed, as well as the best methods of

[1] Iowa State College bulletin no. 33, "Identification of Potato Varieties" is used to show characteristics and market season of each.

storage. The class finds the number of pounds of potatoes per bushel, the number of potatoes per pound, the number of servings of mashed and of creamed potatoes per pound, and the percentage of waste in peeling different sizes and shapes.

In the work with fresh fruit, a similar chart is used. With dried fruits, package and bulk goods are discussed as to sanitation, appearance, and cost. All sizes of apricots and prunes are cooked to notice size, flavor, condition, and waste.

Two lessons are given to the study of tea, coffee, cocoa, chocolate, and spices. Brands are tested for adulteration, flavor, cost per serving, and appearance.

In the work with starch and cereal products, the students are taught the importance of reading labels and estimating the true cost per pound of all package goods. Prepared cake and pancake flours are tested for texture, flavor, and cost.

One lesson deals with fats and oils on our markets. Experimental cookery results are used, noting comparative cost and varying results from different fats and oils used for flavoring, shortening, and deep fat frying.

Eggs are studied as to grades, selection, and storage. Dried egg and the so-called "egg substitutes" are tested in cakes, mayonnaise, and custards.

The lessons on fish and meat, given with the coöperation of the Animal Husbandry Department, emphasize proper selection and care in the home.

State and Federal Pure Food Laws are examined with reference to the commercially canned fruits, vegetables, meat, and fish. The students are taught grades and brands of goods. Different sized cans are opened in class and the following information tabulated:

Canned Goods

NAME	BRAND	GRADE	PRICE	SIZE CAN	NET WEIGHT	WEIGHT SOLIDS	MEASURE		COLOR	FLAVOR	PACK
							Liquids	Solids			

Reports of inspection of the local supply of fresh and canned milk are considered in the study of dairy products. The products studied are condensed, evaporated, and dried milk, and brands of cheese, their market appearance, flavor, cost, and storage.

With each type of food, a study is made of the prepared products on the market to compare their flavor and cost with homemade products. Some of the foods tested are salad dressing, pickles, meat loaf, pancake syrups, pie fillings, quick puddings.

The lecture work presents to the class the problems involved in getting food from the producer to the consumer, the spread of difference in prices, functions of the various middle men, and the possibility of misuse of their power, and the factors at work to organize and regulate these processes. Special emphasis is given to the work of the Bureau of Markets in the standardization of products, weights, measures, and containers, and attention is given to all federal and state laws relative to the sale of food stuffs, including packing, shipping, and storing.

At the beginning of the term, each student chooses a project for practical research and investigation. Frequent conferences with the instructors and consultations with specialists in the college and in the trades vitalize the projects. Examples of subjects are:

1. Compare the Pure Food and the Sanitary Laws of Iowa with those of five other states.
2. What are the causes and results of the investigation of the meat packers?
3. Study the local grocery stores as to sanitation, quality of goods, prices, and other conditions.
4. Chart egg prices in New York, Des Moines, and Ames for one month. Why the changes and differences? What determines price?
5. Chart prices paid for ten staple products in Des Moines, Ames, and a village retail store. Explain variations in price.
6. Study advertisements of foodstuffs. Give advantages and disadvantages of buying these foods. Illustrate.

A field trip to Des Moines includes the public market, a wholesale house, a meat packing house, a large retail store and a fish market. Several lectures are given by men in the produce business.

SPECIAL METHODS COURSE IN HOME ECONOMICS

EFFIE I. RAITT

University of Washington, Seattle

I. Brief survey of the household in successive periods of the world's history.
   1. Points considered: a, type of family; b, women's social position; c, education of children; d, household a productive unit; e, religious bond—economic bond.
   2. Periods: a, primitive times; b, Hebrew; c, Greek; d, Roman; e, Middle Ages; f, Seventeenth and Eighteenth Centuries; g, Colonial times in United States.

II. Present status of the American home and its needs.
   1. Sources of help.
   2. Analysis of the job of homemaking: a, organization of the family—division of labor, division of responsibility, coöperation (sympathy, unity of purpose); b, social responsibility; c, civic responsibility; d, recreational life of the family—hospitality; e, religious training; f, education in the home—habit formation; g, care of dependents—children, the sick, the aged; h, selection and care of the house, its furnishings and equipment; i, household accounts and budgets; j, feeding the family; k, clothing the family.

III. The meaning of education for the student as:
   1. An individual.
   2. A member of society.
   3. A bread winner.

IV. Home economics education.
   1. Its contributions in the general scheme of education.
   2. Factors influencing development: a, philanthropic activities (1) cooking and sewing schools—New York, Boston, and Philadelphia, (2) the kitchen garden movement; b, spread of higher education for women; c, development of science; d, the manual training movement; e, vocational educational aims.
   3. Educational agencies: a, grade schools; b, junior high schools; c, general high schools; d, vocational and technical high schools; e, private schools; f, continuation and part-time classes; g, trade schools; h, evening schools; i, Young Women's Christian Association classes; j, church and settlement classes; k, extension work of various types; l, women's clubs; m, Camp Fire Girls; n, Girl Scouts; o, Junior Red Cross, p, other agencies.

4. Status and function of each group in general.
5. Home economics in the 7th and 8th grades and in high school:
   a. Basis for the work: (1) needs of the girl, the family, the community; (2) modification made necessary by the character of the community, groups to be reached, time allowed, correlation with other subjects, equipment, cost.
   b. Organization of courses: (1) factors to be studied (a) State course of study—its value and need for modification; (b) Smith-Hughes regulations and state provisions; (c) selection of subject matter as determined by needs.
   c. Common methods of presenting lessons and value of each: dictation, discussion, demonstration, experiments, text books and manuals, illustrative materials, excursions.
   d. The project method:
      (1) Comparison of value of purposeful activity on the part of the pupil with task imposed by the teacher.
      (2) Types of projects: (a) school room projects (objective or work should be clear to pupils); (b) observation and report projects; (c) home projects: essentials—purposeful activity on the part of the pupil must involve managerial skill, must afford opportunity for gaining new knowledge, must give opportunity for developing manipulative ability, must be conducted under approximately normal conditions, must parallel class room instruction, must have a plan and records, must be supervised.
   e. Analysis of subject matter for teaching points. (Cover entire range of homemaking activities as far as limitation of classroom permits. II, 2. Refer to analysis of the job of homemaking.)
   f. Laboratory management: (1) housekeepers duties; (2) creating home atmosphere; (3) hostess duties—flowers and greens, receiving visitors; (4) care of equipment—towels, machines; (5) care of supplies—cupboards, closets, etc.; (6) disposal of products from food classes—pupils own lunch, luncheon for groups of teachers, sales and special orders, take home, school lunch room.
   g. The lesson plan: use, form, practice in writing lesson plans.
   h. Demonstration lessons by members of the class, using class as pupils: (1) presenting lesson; (2) judging lesson—objective, teaching points, methods of presentation, time division, laboratory management, summary.

i. Establishing standards in home economics: (1) score cards; (2) note books; (3) examinations; (4) tests and measurements—speed, skill, ability to make application, initiative used, ability to organize, ability to judge relative values.

6. Part time and continuation classes: a, purpose; b, type of pupils and their needs; c, selection of subject matter; d, methods of presenting; e, Smith-Hughes regulations and state provisions; f, practice in organizing courses.
7. Evening schools: a, purpose; b, kind of work desired; c, needs of pupils and means of ascertaining; d, selection of subject matter; e, methods of presenting; f, Smith-Hughes regulations and state provisions; g, practice in preparing unit courses; h, cost; i, equipment.
8. Extension work: a, history; b, present status; c, needs and methods; d, Smith-Lever Act.

V. Related subjects education.

1. Types.
   a. Related science courses: (1) general biology including botany, zoology, bacteriology and sanitation, physiology, hygiene; (2) household physics; (3) household chemistry.
   b. Related art courses: (1) principles of design; (2) applied design.
2. Practice in planning courses.
3. Consideration of place in the curriculum.

VI. Plant and equipment for homemaking classes.

1. Types.
   a. Laboratory: (1) food; (2) clothing; (3) bedroom and bathroom; (4) dining room; (5) laundry.
   b. Accessories and substitutes: (1) teachers' room; (2) special rooms in school such as faculty room, office, girls' rest room; (3) teacherages; private homes for special lessons.
   c. Character of laboratories as to: (1) location; (2) lighting and ventilation; (3) finish and color; (4) storage facilities; (5) equipment—amount, arrangement, kind, cost.

VII. Bibliography.

1. Text books—manuals, books for reference. Review and record in card catalogue, giving author, title, type, purpose, cost, publisher, special features, criticism.
2. Federal, state, and private bulletins, pamphlets, leaflets. List and note value and special features.
3. Magazines and journals. Estimated value, cost, publisher.

VIII. Illustrative material and supplies.
1. Source.
2. Cost.
3. Care.

IX. The teacher.
1. Administrative duties: a, accounts; b, records and reports; c, inventories.
2. Community life: a, teacher's place; b, methods of securing interest in home economics work; c, activities related to home economics —Women's Club, Parent Teacher Association, Child Welfare Organization, work of public health nurse.
3. Professional life: a, relation to other teachers; b, loyalty to school officials; c, attendance of national, state, and local educational meetings; d, means of advancement.
4. Personal life: a, recreation; b, health; c, living conditions; d, personal accounts and budgets; e, appropriate dress.

BASAL METABOLISM AND FOOD CONSUMPTION OF UNDERWEIGHT COLLEGE WOMEN

KATHARINE BLUNT AND VIRGINIA BAUER

(*Continued from April*)

FOOD CONSUMPTION

The other feature of the study of underweight young women consisted of observations on their food consumption. The diet of each girl was observed for two typical days often consecutively and usually within the week of the first metabolism observation.

Method of Study. The method generally employed was for the younger of the writers to be present at each meal and to weigh or measure all food served and what remained uneaten. Most of the girls ate either at the University Commons or in one of the Women's Halls. A careful description of all food eaten was kept as the meals were weighed, the thickness of sauces, richness of desserts and gravies, sweetness, amount of egg, and other points being noted. The supervisor of the Commons and of the Halls furnished information in regard to the proportions of a number of dishes served at these places.

The girls kept a record of all food eaten between meals. The size of these portions had to be approximated, but, as, contrary to expectations, the actual

between meal eating was very small, no important error was introduced. As it was impossible for the writer to be present at the meals of five of the subjects who ate breakfast and dinner at home, the use of the scales and measuring cup was carefully explained, and the girls themselves kept the record, describing the food eaten. If this description was not clear they were asked about it more in detail when the list was completed. In the latter part of the work two girls who ate at the University Commons were simply told to keep a record of the food they chose and what was not eaten. The portions had been repeatedly weighed and the girls usually ate all that was served so that their estimation of the bit which was occasionally left was not important in affecting the final results. In the calculations, Rose "Laboratory Manual of Dietetics" and "Feeding the Family" and some data prepared in this laboratory by the dietaries class were used.

The attempt was made not to influence the young women in any way on the days their diets were observed. The fact that most of them were not home economics students and knew very little about food selection made it all the more probable that self-consciousness did not affect their usual habits and that they were eating about as they usually did.

This method of making a dietary study is obviously not the most accurate and two days' diet is a smaller number than is desirable; but it is believed that sufficient care has been taken in the weighing and in the computations, and in the effort to secure meals in accordance with the subjects' usual habits to make the results of value.

Results. The results of the dietary studies are given in Table 5. It may be seen that ten of the girls were eating less than 1800 calories per day, sixteen less than 2000, and only two over 2200. One extreme case (omitted from the average) consumed only 970 calories per day. This subject, a very inactive, rather nervous young woman, declared that the two days studied were entirely fair samples of her dietary habits, and friends in the dormitory supported her in this statement. While it is of course unlikely that her statement can be strictly true, since her basal metabolism was higher than the calories of her food, yet it is probable that she often indulged in this limited food intake. The calories per kilo for this student were 19.1 and for the other 18 ranged from 31.1 to 52.1, the average for the 18 being 38.2.

The relation between the per cent underweight and the food intake is not entirely consistent. It is interesting, however, that nos. 1, 5, 7, and 10 who were badly underweight had a very low average intake.

Adequacy of Diets. There must be some standard with which to compare these diets if we are to test their adequacy. There seems to be a diversity of opinion as to the calories actually required by a young woman of rather sedentary habits.

We might employ the well-known standard of a 70-kilo man of sedentary occupation requiring 2500 calories. Calculating on that basis, using the aver-

age weight of this group, 48. 4 kilos, their energy requirement would be 1710 calories, or 35.3 calories per kilo.

If instead of their actual weight as it is we take the average that they should have, or 58.6 kilos, calculation from this standard gives 2093 calories, or 43.2 calories for each of the 48.4 kilos which they actually have. It is probable that the method of arriving at this higher figure is justifiable, since the extra weight of the normal individual is in large part due to non-metabolizing fat deposits lacking in these underweights.

The Inter-Allied Scientific Food Commission (11) fixed the energy requirement of a sedentary munitions worker somewhat higher—at 2200 calories, or 39.3 calories per kilo.

TABLE 5

Daily food consumption

NUMBER	UNDER WEIGHT	WEIGHT	DAYS	TOTAL CALORIES	CALORIES PER KILOGRAM	PROTEIN	MEALS EATEN AT	EXCESS OF FOOD OVER BASAL
	per cent	*kg.*				*gm.*		*calories*
			I	1575		54	U. Commons	
1	26	48.1	II	1770		50		
			Av.	1673	34.8	52		303
			I	1940		44	Home	
2	24	46.0	II	1825		66	U. Commons Lunch	
			Av.	1883	40.7	55		708
			I	1940		73	Home	
3	23	49.6	II	1825		74		
			Av.	1883	39.7	74		573
			I	2000		85	U. Dormitory	
4	22	47.3	II	1655		50		
			Av.	1827	38.6	67		427
			I	1830		62	U. Commons	
5	21	52.0	II	1745		65		
			Av.	1787	34.3	64		417
			I	1860		56	U. Commons	
6	21	49.1	II	2110		46		
			Av.	1990	40.5	51		
			I	1505		49	U. Commons	
7	20	47.3	II	1865		82		
			Av.	1685	33.5	62		455
8	19	46.8	No food consumption data					

TABLE 5—*Continued*

NUMBER	UNDER WEIGHT	WEIGHT	DAYS	TOTAL CALORIES	CALORIES PER KILOGRAM	PROTEIN	MEALS EATEN AT	EXCESS OF FOOD OVER BASAL
	per cent	*kg.*				*gm.*		*calories*
			I	1985		71	Tea room	
9	19	44.7	II	1940		70		
			Av.	1963	43.5	71		
			I	1675		33	U. Commons	
10	19	49.7	II	1645		51		
			Av.	1660	33.4	42		410
			I	2100		70	Home	
11	18	47.3	II	1482		51		
			Av.	1791	37.9	61		381
			I	1630		61	U. Commons	
12	15	50.0	II	2090		70		
			Av.	1860	37.2	65		
			I	2055		41	U. Commons	
13	15	45.9	II	1560		50		
			Av.	1757	38.4	45		582
			I	1440		33	U. Dormitory	
14	15	45.0	II	1355		34		
			Av.	1397	31.2	34		137
			I	2120		69	Home	
15	14	52.0	II	2340		64		
			Av.	2280	43.9	67		900
			I	1510		45	U. Dormitory	
16	13	47.2	II	1610		57		
			Av.	1560	31.5	51		210
			I	1606		25	U. Dormitory	
17	12	57.2	II	1859		64		
			Av.	1782	31.1	45		583
			I	960		15	U. Dormitory	
18	12	50.8	II	985		30		
			Av.	973	19.1	23		427
			I	2295		45	U. Dormitory	
19	11	51.7	II	2400		69		
			Av.	2343	45.3	57		1183
Average of all but no. 18.....				1830	37.3	56.6		519

In deciding which of these standards should be applied to the subjects of our study it is necessary to consider their activity. To obtain the necessary information they were all asked to report on the usual time spent in sleeping, sitting, and walking, the latter including actual walking, standing, dressing, etc. Their averages were 8.6 hours for sleeping, 7.6 hours for sitting, and 7.8 hours for walking, with very slight individual differences in the time for sleep and a somewhat wider range in the distribution of their walking time. They were all fairly inactive girls. None of them participated in any formal exercise other than the two hours a week prescribed by the Physical Education Department. The fact that they averaged nearly nine hours sleep is surprising and is possibly the result of the persistent advice of the Physical Education Department. It is probable also that they tired more quickly than the better nourished person and that their fatigue induced them to go to bed earlier. In fact a number of the subjects said that they became tired very easily.

To calculate food demand from these reports in an effort to find the energy requirement above the basal metabolism is interesting but of course not very conclusive, and for our subjects there are two special difficulties: the vagueness as to the kind of activity meant by "walking etc." with its inclusion of indoor and outdoor walking and standing and laboratory work of various kinds; and the extreme restlessness of most of the subjects. It was difficult for them to relax; they moved some part of their bodies almost continually, usually entirely unconsciously, and certainly expended more energy than the person who sits quietly. This excess is usually not taken into account in estimating food requirements and we have no studies upon which to base the extra amount required.

An effort at calculation may, however, be made by employing the usual 10 per cent increase above the basal, for the specific dynamic action of the food, and some of the figures obtained by Benedict and Johnson (12) in their observations on successive groups of Simmons College students in the large respiration chamber of the Nutrition Laboratory. They found a 10 per cent increase above the basal for their young women when sitting quietly reading, and a further increase of 13 per cent when hemming. This 23 per cent is probably fair to use for our women while sitting. Further, they found 67 calories per hour increase for very slow walking. Our women weigh less than theirs (48.4 kilos instead of 54 kilos) so the walking figure may be taken for us as 60 calories per hour. We then have:

1300 calories, basal metabolism
130 calories, 10 per cent increase for food
95 calories, sitting 7.6 hours
468 calories, walking 7.8 hours

1993 calories, total

This gives us approximately 2000 calories, or about 40 calories per kilo for their daily requirement from this rough calculation and with only the minimum allowance for waste in digestion—almost surely a very conservative estimate.

Actual dietary studies of similar groups are also to the point as a basis of comparison. The Vassar College study made by Macleod and Griggs (13), one of the most recent of these, showed that the actual average food intake of the students, at meals, was 2698 calories per day. This does not include the between meal eating which proved to be quite large. Earlier studies made at women's dormitories at the University of Chicago, Lake Erie College, North Dakota Agricultural College, and Wesleyan University showed the average girl eating 3277, 2592, 2589, and 2544 calories, respectively. These high figures further support the opinion that the average of 2000 calories or 39 or 40 calories per kilo is none too high a standard for our subjects.

Instead of this, 11 of them (exclusive of the erratic no. 18 with extremely low calories) were eating less than 39.5 calories per kilo, eating in fact, amounts varying from 38.6 calories down to 31.1 calories. It is extremely probable that these 11 were not getting enough to maintain their weight, and surely not enough to make much of a gain. It is known that a number of them were actually losing at the time of this experiment. Nine of these 11 whose basal metabolism was observed were eating less than 500 calories above their basal—a difference too small to meet adequately the demand of their activities and the specific dynamic action of their food. Two whose current loss in weight was especially marked consumed only 137 and 210 calories extra. Of the seven who were eating more than 39.5 calories per kilo all also showed more than 500 calories excess over their basal. One, no 3, was known to be gaining. Knowledge of the others is lacking.

Other Comments on Diet Study. The quality of the diets was not so good as one might wish. If we accept Sherman's estimate of the protein requirement as roughly one gram per kilo per day, we find that four were below that limit even on the basis of their own low weight, and nine were below 55 grams per day, probably barely meeting their protein needs.

Only one of the entire group ate fruit more than once a day and four less than once a day. Also only four were eating vegetables other than potatoes more than once a day, the majority averaging only one such vegetable. This is very low when one considers the rather small portions often served in a cafeteria or dormitory. The same criticism can be made of their use of milk. Only four of the subjects were drinking as much as one pint per day, the usual amount being one half pint per day. On the whole, then, their food consumption consisted too largely of cereals and sugar and did not contain sufficient milk, fruit, and vegetables.

Three were inclined to eat very small breakfasts but no one went without breakfast. The between meal eating was not large. Several ate apples, oranges, or bananas the days they were observed, three had cake, four had small

amounts of candy. Only one had ice cream. No. 4 was the only subject whose between meal eating was really a large factor.

It was very interesting to note the girls' own ideas about their food habits. When first approached practically all of them declared they were very certain that they were eating enough. After the study had been made and they were told that to gain they must eat more, most of them said they had no appetite for more; they simply could not eat any more. The suggestion was made that probably their appetite was largely a matter of habit and by practice they could increase their food consumption.

Another idea practically all of them had was that they were thin because one of their parents or other relatives was. It "ran in the family" and there was nothing that could be done about it. The girls were told that the fact still remained that they were not eating enough to enable them to increase their weight, and that they would probably feel much better if they ate more. This possible improvement is illustrated by subject no. 3, who has been observed for nearly five months. At the beginning she weighed only 105 pounds and was 25 per cent underweight. She became alarmed at her condition and began to try to eat more, but did not change any of her other habits. In four months she had gained 12 pounds. She says it is most surprising how much more she can eat now and how much better and more ambitious she feels.

SUMMARY

A group of 19 college women who were underweight by comparison with life insurance standards, and who were of a nervous type, were studied to determine their basal metabolism and their food consumption. Their basal metabolism like that of some underweight women observed in the Boston Nutrition Laboratory, averaged almost normal. Their food consumption, however, was low, averaging only 1830 calories or 37.3 calories per kilo. Eleven of them ate less than 500 calories above their basal metabolism, one, on the two days observed, even less than her basal, and two whose current loss in weight was especially marked, only 137 and 210 calories above.

From these facts and a discussion of their probable requirement it is concluded that many of the groups were hardly eating enough for their daily needs and certainly not enough for any marked gain in weight.

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12. Benedict and Johnson: Energy Loss of Young Women During the Muscular Activity of Light Household Work, *Proc. Am. Phil. Soc.*, 1919, 58: 89.
13. Macleod and Griggs: A Dietary Study at Vassar College, *J. Home Econ.*, 1918, 10: 97.

(*Concluded*)

CURRENT HOME ECONOMICS RESEARCH IN AMERICAN COLLEGES AND UNIVERSITIES AND IN GOVERNMENT INSTITUTIONS

From the Research Committee of the American Home Economics Association

(*Continued from April*)

Note.—It may very likely be objected, that a certain number of these theses are not explicitly stated and may have been only very vaguely conceived. In some cases, those who are at present in charge of college departments may not have been responsible for all the theses announced as coming from the departments.

THE UNIVERSITY OF CHICAGO, 1919–1921

Nutrition, Food Chemistry, and Experimental Cooking

The Carbohydrates of Navy Beans. Marietta Eichelberger. Master's thesis, 1919.

The Acidity of Cooked Vegetables and their Volatile Acid and Sulfur. Mary Hahn. Master's thesis, 1919.

The Digestibility of Bacon. Katharine Blunt and Marguerite G. Mallon. *Jour. Biol. Chem.*, 38, 43, 1919. Part of Master's thesis of M. G. Mallon.

What is Malnutrition? Lydia Roberts. U. S. Children's Bureau, Publication No. 59, 1919.

Changes in Fats Absorbed by Fried Foods. Sybil Woodruff and Katharine Blunt. *Jour. Home Econ.*, 11, 440, 1919. Part of Master's thesis of S. Woodruff.

A Malnutrition Clinic as a University Problem in Applied Dietaries. Lydia Roberts. *Jour. Home Econ.*, 11, 95, 1919. Part of Master's thesis.

Review of Literature on Chemistry of Yeast Breads with Experimental Work on Fermentation Temperatures. Lotta Day. Master's thesis, 1920.

The Effect of Cooking on the Water-Soluble Vitamine in Carrots and Navy Beans. Elizabeth W. Miller. *Jour. Biol. Chem.*, 44, 159, 1920. Part of Doctor's thesis in Household Administration.

The Composition of Peanut Meal and Its Use as a Diabetic Food. Margaret Mumford. Master's thesis, 1920.

Comparative Effect of Caffein and Coffee on Respiratory Metabolism. Minnie Phillips. Master's thesis, 1920.

Comparison of Methods for Determination of Fat in Breadstuffs. Pearl E. Ruby. Master's thesis, 1920.

Creatinin and Creatin in the Blood. Chi Che Wang and Mamie Dentler. *Jour. Biol. Chem.*, 45, 237, 1920. Part of Master's thesis of M. Dentler.

Water-Soluble B. in Cabbage and Onion. Bertha K. Whipple. *Jour. Biol. Chem.*, 44, 175, 1920. Master's thesis, 1920.

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Basal Metabolism of Normal Women. Katharine Blunt and Marie Dye. *Jour. Biol. Chem.*, 47, 69, 1921. Part of Doctor's thesis of M. Dye.

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Culinary Uses of Frozen Fruits. Evelyn G. Halliday and Margaret Smith.

Changes in the Distribution of Nitrogen in Egg White in Cooking. Ruth Kern. Master's thesis, 1921.

Changes in Fat Constants Due to Cooking Processes. Ruth Lilley. Master's thesis, 1921.

The Effect of Certain Stimulating Substances on the Invertase Activity of Yeast. Elizabeth W. Miller. *Jour. Biol. Chem.*, 48, 329, 1921. Part of Doctor's thesis in Household Administration.

The Effect of Theobromine on Respiratory Metabolism. Margaret O'Loughlin. Master's thesis, 1921.

Report on Child Health School held at the University of Chicago. Lydia J. Roberts.

A Study of the Diets of Pre-School Children of Gary, Indiana. A section of a bulletin in preparation by the U. S. Children's Bureau. Lydia J. Roberts.

The Relation between Viscosity and Imbibition of Gluten and the Volume and Texture of Flour Mixtures as Affected by Baking Powder. Mildred Tackaberry. Master's thesis, 1921.

Institution Economics

Occupations other than Teaching Open to the Food-trained Women. Effie M. Carp. Master's thesis, 1921.

Home Economics Education and Clothing

Analysis of Home Economics Textbooks. Leona F. Bowman. Master's thesis, 1919. (Incorporated in the Monograph, Home Economics in American Schools.)

Home Economics in American Schools. Supplementary Educational Monographs, Vol. II, No. 6, University of Chicago, 1921. Mabel B. Trilling, Leona F. Bowman, and others.

Standardized Tests in Textiles and Clothing. Mabel B. Trilling and Florence Williams. *Jour. Home Econ.*, 12, 486, 1920.

Factors of Cost in Women's Clothing. Lillian Baker. Master's thesis, 1921.

Organization of Food and Clothing Courses in High Schools of the United States. Leona F. Bowman.

Textiles: Its Importance as a Separate Subject in a High School Sewing Course. Leona F. Bowman.

Home Economics Tests: Neck Finishes for Undergarments. Adah Hess.

Objectives in Textile Education. Mabel B. Trilling.

Informal Tests in Teaching Textiles and Clothing. Mabel B. Trilling and Adah Hess. *Jour. Home Econ.*, 13, 483, October, 1921.

Standards of Attainment in Machine Sewing. Florence Williams.

IOWA STATE COLLEGE, AMES

Textile Buying and Shopping Habits and Factors that will Tend to Improve them. Callie May Bliss. Master's thesis, 1921.

13 graduate students are at work in the Home Economics Division this year (1921–22), 5 or 6 of whom may probably complete work for the master's degree by close of summer session, 1922. Some of these problems are: Experimental Studies on Gingerbread; Extent to Which Artificial Silk is Replacing True Silk in Clothing; Current Methods of Teaching Laundering in Iowa High Schools; Plan for Construction, Decoration, and Furnishing of Model Apartment, with Cost Estimates.

SCHOOL OF PRACTICAL ARTS, TEACHERS COLLEGE, COLUMBIA UNIVERSITY[1]

Departments concerned are indicated as follows: B, Biology; BC, Biochemistry; C, Cookery; PT, Physical Training; HA, Household Administration; HC, Household Chemistry; N, Nutrition.

Serial No.	*Depart.*	*Subject Research.*
119	BC	Vitamine Yeast Test Studies
219	BC	Cream of Wheat Studies, Infant Cereal Problem
120	BC; C; HC	Studies of Frying Fats
220	BC; C	Studies of Fondant Making
320	HA	Metal Polishes and Floor Waxes
420	HC	Cleaning Agents and Effect on Fabrics
520	BC; C	Pressure Cooker Efficiency
620	C	Ice Cream Making; salt and ice proportions
720	C	Grades of Food and Buying Problems
121	N	Almonds, and Other Nuts as a Source of Vitamin A
221	N	The Utilization of Calcium in Almonds
321	N	The Basal Metabolism of Young Girls
421	BC	Researches on Corn Products Materials
521	BC	The Value of Phytin in Rickets Prevention
621	BC; PT	Hemoglobin-Standardization of Tests
721	BC	Effect of Diet on Anemia
821	BC; C	Peanut Flour Studies
921	BC	The Chemical Nature of Vitamin B
1021	N	The Utilization of Calcium in Man
1121	N	The Laxative Properties of Vegetables
1221	N	The Basal Metabolism of the White Rat
1321	HC	The Chemistry of Caramel
1421	B	The Transfer of Body Organisms and Bathing Appliances
1521	B	Butter Spoilage
1621	B	Vitamins and the Life of Stock Cultures
1721	B	Standard Teaching Outfits for High Schools
1821	B	Dish-washing and Germ Transfer
	C	Emulsification in Mayonnaise: A Project Undertaken in Co-operation with Simmons College
	C	Problems in Cake Mixing

SIMMONS COLLEGE, BOSTON[2]

The Chloride Content of Certain Foods.

Distribution of Lime and Iron between Vegetable and Water in the Cold Pack Canning Process.

Conditions Affecting the Jellification of Pectin.

Emulsification in Mayonnaise.

COLORADO AGRICULTURAL COLLEGE, FORT COLLINS, 1918–1921

Cooking Qualities of Colorado Potatoes. Dr. N. E. Goldthwaite.

MILWAUKEE-DOWNER COLLEGE, MILWAUKEE, WISCONSIN, 1918–1921

Hitherto Unreported Experiments with Different Fats in the Making of Cake and Pastry. Ruth F. Johnstin and Susan F. West.

Cake Making to Determine Best Temperature for Baking "Butter" Cakes. *Jour. Home Econ.*, 11, 352, 1919.

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[1] Researches given here are those to which approval and grants had been made, November, 1921.

[2] Theses in the Chemistry Department by Household Economics Students.

THE UNIVERSITY OF MINNESOTA, ST. PAUL

Division of Home Economics

Studies in the Determination and in the Utilization of the Relative Sweetening Power of Certain Sugars. Cecile C. Stone, Mildred Weigley, and Alice Biester.

A Comparative Study of the Losses of Iron in Vegetables Cooked in Salted and Unsalted Water. Jean M. Dorsey and Alice Biester.

A Study of Factors Relating to the Management and to the Food in a Group of Children's Homes. Mary C. Nye and Alice Biester.

Studies on the Effect of Storage Upon the Keeping Quality of Certain Vegetables Canned by the One Period Cold Pack Method. Alice Biester, Mildred Weigley, and Winifred Case Knapp. (Part of thesis (M.S.) of W. C. Knapp. See *Jour. Home Econ.*, 13, 494, 1921.)

Division of Agricultural Biochemistry

The Influence of Heat and Oxidation Upon the Nutritive and Antiscorbutic Properties of Cow's Milk. Edla V. Anderson and R. A. Dutcher. (See *Science*, 53, 446, 1921.)

The Carbon Dioxide Diffusion Ratio in Doughs as an Index of Flour Strength. Mildred Weigley and C. H. Bailey.

College of Education

An Analysis of Text Books in Textiles and Clothing. Ethel L. Phelps and M. E. Haggerty.

A Study of the Relation Between Certain Variable Factors and Tensile Strength in a Group of Cotton Fabrics. (In progress.) Ethel L. Phelps and Anna Streed.

THE UNIVERSITY OF WASHINGTON, SEATTLE, WASHINGTON

Detailed Report of Home Economics Education in Normal Schools, Colleges, and Universities in the Pacific Northwest. Part of the work of the National Committee. Effie I. Raitt, Henrietta Walker.

Textile Research in Institutions of Higher Education as Part of the National Committee Work. Grace G. Denny.

Testing Textiles. Grace Denny.

Methods for Determining Shrinkage in Unbleached Muslin. Methods for Testing Textiles for Department Stores. Grace G. Denny and Research Students.

Comparative Cost of Gas and Electricity for Cooking Purposes. Martha E. Dresslar.

Study of Feeding Problems in Lumber Camps. Jessie R. Mueller. See *Jour. Home Econ.*, 13, 241, 1921.

Intensive Study of Food Consumption in Summer Camp of Undernourished Children. Martha Koehne and Dorothy Kuebler.

Relative Expenditure of Money for Different Types of Food in Family and College Groups. Martha Koehne and Students.

PEABODY COLLEGE, NASHVILLE, TENNESSEE, 1918–1921

Study of Cornbreads. Rena Wiggs, 1920.

Fats and Their Uses in Pastry Making. Mary Carter Tatum, 1921.

The Determination of the Baking Soda Equivalent of Sour Milk. Mary Priscilla Wilson. (Chemistry Department in coöperation with Home Economics Department.)

REPORTS OF SURVEYS FROM CHILDREN'S BUREAU, U. S. DEPARTMENT OF LABOR OF SPECIAL INTEREST TO HOME ECONOMICS WORKERS. (1919 TO 1921)

No. 46. Maternity and Infant Care in Two Rural Counties in Wisconsin, 1919.

In Press

No. 87. Statures and Weights of Children Under Six Years of Age.
No. 88. Maternity and Child Care in Selected Rural Areas of Mississippi.
No. 65. Child Care and Child Welfare; Outlines for Study. (Published by the Federal Board for Vocational Education, Washington, D. C.)
Child Labor and the Work of Mothers in the Shrimp and Oyster Canning Industries on the Gulf Coast.

In Preparation

A Study of Industrial Conditions Affecting Children in an Anthracite Coal Mining Area.
Children in Coal Mining Communities (West Virginia).
Child Welfare in Cotton Growing Areas in Texas.
Child Welfare in Representative Beet Growing Communities in Michigan and Colorado.
Kentucky Nutritional Survey.
Report on the Study of the Pre School Child in Gary, Indiana.

SURVEYS IN HOME ECONOMICS EDUCATION, MADE BY THE BUREAU OF EDUCATION, U. S. DEPARTMENT OF THE INTERIOR, WASHINGTON, D. C.

Investigations in Methods of Teaching Home Economics in Secondary Schools. Mrs. Henrietta W. Calvin.
Investigations in the Laws, National and State, which have Affected Home Economics Teaching, Research, and Education in the United States. Mrs. Henrietta W. Calvin.
Investigations of Home Economics Education in Normal Schools. Mrs. Henrietta W. Calvin.
Investigations of Rules Governing the Certification of Home Economics Teachers for Public Schools in the Various States. Mrs. Henrietta W. Calvin.
Investigations of the Number of High Schools Offering Home Economics Courses, Number of Girls Enrolled in Classes in Such Schools, Length and Frequency of Class Periods and Number of Home Economics Teachers Employed. Mrs. Henrietta W. Calvin.
Educational Surveys in Memphis, Tenn.; San Francisco, Cal.; Elyria, Ohio; Wheeling, W. Va.; Wilmington, Del.; Elizabeth City, N. C.; State University of Arkansas; Higher Educational Institutions of Iowa. Mrs. Henrietta W. Calvin and others.

SURVEYS AND OTHER STUDIES FROM THE FEDERAL BOARD FOR VOCATIONAL EDUCATION, U. S. DEPARTMENT OF THE INTERIOR, WASHINGTON, D. C.

Survey of Junior Commercial Occupations. S. G. Nichols.
Trade and Industrial Education for Girls and Women—A Study of Economics and Social Aspects of Vocational Education for Girls and Women. Mrs. Anna L. Burdick.
Retail Selling. Mrs. Lucinda W. Prince.
Home Projects—A Method of Instruction of Teaching Home Economics. Genevieve Fisher.
Analysis of Home Making as a Basis for Courses of Instruction. Zella E. Bigelow.
Source Material on the Teaching of Child Care and Child Welfare. The Children's Bureau in coöperation with the Federal Board for Vocational Education.

EDITORIAL

The Home Economics Teacher and the Health Program. The progress of child hygiene work in the United States during the past year is summed up by Dr. Richard A. Bolt, Director of the American Child Hygiene Association, in the February issue of *Mother and Child*. Doctor Bolt says that hand in hand with the widespread extension of educational work for child health has come the setting up of machinery to meet the needs of the community. The past year has witnessed a notable advance in our knowledge of causes of malnutrition in school children and the extent to which it occurs. Definite steps have been taken in the way of proper education of both mothers and teachers along nutrition lines, though much must be done to standardize methods of approaching the problem.

We have also progressed in recognizing the need for instruction in nutrition of normal children, as well as of children who are 10 per cent and more underweight. Dr. Eugene R. Kelley, Commissioner of Public Health of Massachusetts, in a recent issue of the Commonwealth says that future development in the field of public health rests in the enlightenment of the average man, woman, and child, by the translation of the scientific knowledge that is extant into terms for use by every one. Doctor McCollum, in a recent address before the New York Nutrition Council, stated that there was no mission so great as this discussed by Doctor Kelley.

Health education in schools is many sided but no group is more widely established or better qualified to transmit education in nutrition than the teacher of home economics. Certainly there is no person in a school system who has had such intensive training in the science of nutrition, particularly if she is a recent graduate or has taken additional courses at some good school. It would seem that she should broaden her program to include food instruction in all the grades through the grade teacher, and assume the responsibility for the formation of right food habits.

Miss McCormick in her article "The Home Economics Teacher and Community Nutrition," in the January JOURNAL, points out several ways in which the home economics teacher may initiate the work or coöperate in its development.

There are many phases of the problem. The schedule must be adjusted and, wherever possible, assistance rendered by increasing the personnel. In many cases the home economics teacher herself must take the initiative in bringing to the attention of the superintendent

the contribution which her training enables her to make to the health program. Unfortunate indeed is the school in which the vision of the home economics teacher is limited to a curriculum which includes simply cooking and sewing without an appreciation of the relation between nutrition and health. Such teachers are in the minority.

Is it not possible to work out an effective program through the coöperation of the grade teachers with the specialists in the school system? The grade teacher may be assisted by the supervisor or helping teacher to correlate health instruction with her other subject under the guidance of the medical director, school nurse, physical training director, and home economics teacher. Thus the home economics teacher may fulfill her obligation to the entire school.

Rickets and Sunlight. Out of the plethora of literature about rickets there seems to emerge at last an indication that the theories of those who have been studying its etiology and treatment are approaching some sort of agreement. McCollum of Johns Hopkins University anticipates the layman's impatience to have the rickets question settled and warns that the formation of definite conclusions had best be deferred until other experimental work is completely developed. Only two or three of the salient facts of the most recent articles are summarized here.

In regard to diet McCollum and his collaborators[1,2] believe that an unidentified substance in cod-liver oil exerts a favorable influence on bone growth and that this substance is not fat-soluble A vitamine. When it is absent from the diet of rats, either a low calcium or a low phosphorus intake will produce rickets. Moreover, if this principle be present the animals are able to develop on a diet low in calcium much better than they could otherwise do.

Sunlight as well as the potent factor in cod-liver oil can prevent the incipiency of rickets. On this point McCollum and Hess et al.[3] agree, though Hess attaches no special significance to cod-liver oil as a curative. He and his co-authors, working in New York City, find that by frequent

[1] McCollum, E. V., Simmonds, N., Shipley, P. G., and Park, E. A. Is There a Substance Other than Fat-soluble A Associated with Certain Fats which Plays an Important Rôle in Bone Development? *Jour. Biol. Chem.*, 1922, 50: 5.

[2] Shipley, P. G., Park, E. A., McCollum, E. V., and Simmonds, N. Is There More than One Kind of Rickets? *Amer. Jour. Dis. Child.*, 1922, 23: 91.

[3] Hess, A. F., Unger, L. J., and Pappenheimer, A. M. The Prevention of Rickets in Rats by Exposure to Sunlight. *Jour. Biol. Chem.*, 1922, 50: 77.

short exposures to the sun's rays the characteristic symptoms of rickets in infants are diminished in three to four weeks time.

The discovery of a possible fourth vitamine of anti-rachitic nature cannot thrill us since our wonder at the accomplishments of these elusive substances reached its peak years ago. But the astounding thing lies in the demonstration of this not yet understood power of the sun's rays to off-set the ill effects of a poor diet.

SYBIL WOODRUFF.

OPEN FORUM

The National Income of Housewives. In the computation of the national income the Bureau of Economic Research[1] deliberately omits to calculate the income for services of housewives. As far as this study is concerned the housewife is not a producer. Let us consider this a moment. Think of the change in our economic system if the cooking of meat, vegetables, fruit, and other foods were taken out of the hands of housewives, or if household management, laundering, care of children, and other household duties were transferred to the industrial system. What a tremendous income would accrue for these services!

The study reveals that 9.25 per cent of all income receivers have an income of less than $600; 22.35 per cent, an income of less than $800; 54.51 per cent, an income of less than $1200; 72.01 per cent, an income of less than $1500; 85.92 per cent, an income of less than $2000.

The share of the national income which should be credited to housewives becomes conspicuously large by virtue of the very figures which ignore it. For as the income of a family decreases the services of the housewife increase. It is required of her that she skillfully manage a small income to meet the elemental family needs. She is obliged to render services which a small income cannot buy. She is forced to labor longer hours to compensate the deficiency in income. We have a situation which parallels the law of conservation of energy. The services and commodities which are not produced by family income find an outlet in the services of the housewife and her assistants in the family.

It is not altogether true that the Bureau of Economic Research has entirely ignored the services of housewives. In a special section an estimate of the value of the services of housewives is given which, if it were included, would comprise 20 per cent of the total income. The figure for 1909 is 8.85 billion dollars and is based upon the pay of domes-

[1] The Income of the United States, The Bureau of Economic Research, 1921.

tic servants before the war, put at $500, and the estimated number of women engaged in housework, put at 18 million. In 1919, due to increase in wages the pay of the houseworker is put at $900, and due to increase in population the total number of houseworkers is put at 20,700,000, giving 18.45 billion dollars as the estimated income of housewives' services.

If it is true that the value of the services of the housewife is inversely proportional to the family income, then the flat estimate of $500 in 1909 and $900 in 1919 is entirely too low. The figures showing the distribution of incomes quoted above give a hint as to the real value of services which the great mass of housewives are obliged to render to balance the deficiencies in the income of the great majority of American families.

There are certain practical reasons why the income analysis of the Bureau of Economic Research should omit the income of housewives. Such a significant study cannot run the risk of gross misinterpretation due to current standards of money value. For example, if the income for housewives were included the per capita income would increase from $629 to $796. Specially interested persons would be quick to take advantage of the figures and to give them an interpretation damaging to wage standards.

All this, however, points to the need of reorganizing the thinking of people concerning the economic services of housewives and their effect upon economic life. The way must be made ready so that the next calculation of the nation's income will not find it necessary to apologize for the exclusion of the income from more than one-fifth of our national production.

HENRY HARAP.

THE QUESTION BOX

Question: In looking over a copy of the JOURNAL of December, 1917, I notice, on page 545, the statement that "Cloves and allspice are effective in large amounts; cinnamon is not effective." In an article in the JOURNAL of December, 1911, it was stated that cloves and cinnamon were both effective, in certain amounts, for the preservation of foods in which they are used, allspice and others having been found wholly useless for this purpose. Will you kindly inform me which, if either, statement is correct?

Answer: There is considerable difference in the behavior of different organisms to the various spices. There is also some difference in the strength of the different brands of spices. In the 1911 article no attempt was made to determine the effect of the various spices on any one organism. In the experiments, the apple sauce was mixed with spice, sterilized by steam for thirty minutes, and subsequently exposed in the laboratory "for a few days to receive contamination from the air." In the other experiments (Bachmann, 1916) several types of organisms were worked with and all conditions were carefully controlled. As a result of the trials with ground spices, Miss Bachmann concludes as follows: "Cinnamon appears to have more antiseptic properties generally than either allspice or cloves. Cinnamon has little antiseptic value toward Rhizopus, but is valuable in preventing the growth of Alternaria, Penicillum and Aspergillus. Cloves are about as effective as allspice for Rhizopus and Aspergillus, but somewhat less so for Alternaria and Penicillum. . . . B. prodigiosus appears to be only slightly sensitive to spices, while B. substilis did not grow on even a 1 to 100 dilution of cloves and of allspice."

The original article, from which the abstract in the Journal of 1917 was quoted, states "Cloves and allspice in large amounts are quite effective in preventing the growth of molds and bacteria, and cinnamon is most effective of the spices; this is true of the ground spices, their astringent oils and alcoholic extracts." The statement that "cinnamon is not effective" was obviously mis-quoted.

Question: One of our students says that the physician in charge of a large well known sanitarium states that if sugar is added to the citrus fruits when eaten, the result will be that, instead of adding to the alkalinity, an acid condition of the blood will be caused, no definite amount of sugar being stated. Is there any truth in this statement?

Answer: There is nothing in the scientific literature, so far as we can find, that warrants such a statement.

BOOKS AND LITERATURE

Here and Now Story Book. By LUCY SPRAGUE MITCHELL. New York: E. P. Dutton and Company, 1921, pp. 360. $2.00.

Today this book is considered remarkable; tomorrow it may be considered epoch making. It is remarkable for several reasons: first, it is written from the point of view of a mother in her home, as well as that of a teacher in the schoolroom; second, it follows the scientific rather than the traditional approach to stories for children between the ages of two and seven; third, it gives a basis from the standpoint of modern psychology for the choice of content and form of stories for young children; fourth, it is a pattern book, a method book—not an anthology—with original stories by both the author and the children themselves.

The *first* reason for considering this book remarkable is that Mrs. Mitchell writes from the standpoint of a mother who knows young children, not only in the intimacy of home life, but also in the more formal life of the schoolroom. This is significant because the trend of education is toward stressing the educational development of children of nursery age, which means that the mother-teacher, before many years have passed, will have a recognized place in the teaching profession, and will be trained for it as is any other teacher.

Already, courses in household arts and science include training in the physical care of young children, and are given quite generally in high schools, technical schools and colleges. But a child is not merely a physical being. This fact scientists are emphasizing more and more. The medical profession—particularly that branch specializing in nervous illnesses—is giving convincing evidence every day that the trend of mental and moral development is largely determined during the nursery years. This being so, it is only a question of time when the mother (and let us hope the father too) will be trained for her great educational responsibility. Mrs. Mitchell is a mother who has already made a place for herself in the educational world.

The *second* reason is that it substitutes the scientific for the traditional approach to stories for children between the ages of two and seven. In order to do this, Mrs. Mitchell has conscientiously tried to first rid herself of preconceived ideas of what characterizes suitable stories for young children. Then she has gone to the children themselves to determine what things get their spontaneous attention, and furthermore what relationships are natural and intelligible to them at two, three, four, five, six, seven years of age. In this way she determines the content of the story. To determine the form she again goes direct to the children, using their own spontaneous art forms as well as the story and verse patterns universal in their appeal to young children. The pragmatic test shows that children, even children outside of Mrs. Mitchell's groups, follow the stories with interest and delight.

The *third* reason is that it gives a basis, from the standpoint of modern psychology, for the choice of content and form of children's stories. Her own relation to the Bureau of Educational Experiments, with which one associates the name of Dr. Dewey, naturally leads one to expect that the psychological basis of her book is in accord with his teaching. She uses as this basis the *here* and *now*—what is familiar to a child. In "How We Think," Doctor Dewey says that what is familiar in a child's everyday life is the teacher's starting point, but that she must see that he recognizes meanings in and beyond what is familiar. Already the familiar activities of the household and neighborhood, especially where they relate to adults, are full of wonder and of mystery to a young child. Given a part in them he feels himself of importance in the social group. He needs must be doing, for he thinks in sense and

motor terms. For this reason Mrs. Mitchell clothes her stories in motor terms and terms of sense. Action, color, sound vivify both verse and story.

The *fourth* reason is that this is a pattern book with original stories by both the author and the children themselves. That it took courage to put forth such a book, Mrs. Mitchell admits, for adults do not easily speak with little children in their own language, much less publish their attempts to do so. But she has done so in the hope of reaching others who like herself are trying to follow the lead of little children into their story world. The book is rich in suggestion and illustration, with a dynamic quality challenging in its effect. For that reason it is sure to arouse discussion. The fact that it has been printed three times in its first four months shows that it is meeting a real need, although the charm and spirit with which the book is written, its cogent presentation of its thesis, hold the attention of those who read it for recreation as well as those who read it for a serious purpose.

ELIZABETH JENKINS.

A Form of Record for Hospital Social Work. By GERTRUDE L. FARMER. Philadelphia: J. B. Lippincott and Company, 1921, pp. 81. $1.50.

In this book, Miss Farmer, Director, Department of Social Work, Boston City Hospital, presents a valiant attempt to break with the prolix chronological social case record and to work out for the specialized field of hospital social service a form of record which will give a succinct, vivid, accurate picture of the individual patient and the treatment involved in the nature of his trouble, and will also facilitate measurement of social cause and effect.

Miss Farmer's method is to recognize differentiation of service required and her "Form" is adjustable to this use. Briefly, it provides for three types of need:

1. The so-called "Slight" or "Short Service" rendered to a considerable number of patients without much social investigation. This is recorded on a 3 x 5 card calling for Identifying Information, Nationality, Church, Industry, Occupation, Medical Diagnosis, Hospital Treatment, Referred by and Why, Statement of patient and possibly of nearest relatives and friends, Reports of agencies and what was done as expressed in statistical action taken.

2. Intensive social case work indicating such follow-up service as would complete the medical treatment plus the adjusting of the social problem, even if not by hospital social service. This is rendered to a comparatively small number of patients. The form used is a 5 x 8 card which provides for all the information on the "Slight Service" card and in addition includes the following topical headings: Financial Condition, Resources, and, to quote Miss Farmer, "The thought-compelling questions"—Social Problem, Social Background to Medical Condition, Plan.

3. An extension folder record is attached to the 5 x 8 record card. This consists of loose sheets, typewritten on both sides with suggested topical headings, such as How the Case Came to Us, Sources of Information, Social Analysis of Patient, Social Treatment Given. This is filed in a manila folder which bears the same number as the 5 x 8 record card of which it is the extension folder. This summarized and adaptable device is the feature which saves the form from becoming a stereotyped questionnaire. If the record cards were used without it, the form would constitute a reversion to the obsolete social case work record when the agency's action was of supreme interest and when there was little individualization of the patient and no thought of the larger social issues involved.

Admirable as it is to make a record concise, to provide for statistical measurement of significant factors, to summarize and to minimize clerical labor, that which is most fundamental to any form of social work with the individual is to determine his personality—the capacity and tendency of the individual to adjust himself to a situation, physical, mental, or social. This is not yet measurable in precise quantitative terms. The extension folder permits of a narrative supplement which may record interpretation

of the individual's character, environment, and previous and present responses to critical situations as viewed by others as well as by the worker.

To complete the form, a 3 x 5 index card, with name, address, case number, date referred, and from which medical department or service of the hospital, is filed by name, and used in connection with the 5 x 8 record card.

The danger in the use of forms should be recognized especially if placed in the hands of a partially trained worker. The spaced topical heading encourages an easy reliance upon one word to describe a problem or a person, such as shiftless. If not checked by a watchful supervisor a form will tend to arbitrarily assign one case as the social problem, and will therefore react upon the thinking of the worker, limiting the range of suggested causes and permitting her personal bias to enter into the decision of what shall be done to help the individual. One also questions the use of the "Short Service" card with its limited information as sufficient basis upon which to "interpret to outside agencies the need involved in the after-care of the patient, the major part of the outside social care of whom is to be borne by the coöperating agencies."

In the analytical study of cases referred from a hospital social service department it is found that much unnecessary suffering and delay are inflicted on the patient because of a failure to prescribe the fitting agency to help the patient.

From this sounding of warning against a too narrow use of forms for social records attention should be drawn to the intrinsic merit of Miss Farmer's Form. It is a direct challenge to the social worker to tidy up her mind, to search for facts to analyze and to interpret in order to solve a problem of human welfare; to the social organization to provide supervision which will see that this use of the form is made by the worker in order to secure the best return from minimum mechanical effort.

Miss Farmer very properly asks this pointed question, "While admitting that to succeed in writing a summary picture record in . . . . few words . . . and in readable form is not easy and demands a certain intellectual and educational background, do we not want all hospital social service workers to stand up to such a test?"

Social undertakings in allied fields will call for the same test for its personnel; therefore this book will be highly suggestive to leaders in other social enterprises, and after reading it they will be disposed to agree with Miss Farmer in saying that "The conveying of information in few words, yet adequately . . . is part of the technique of a good hospital social worker. It is quite useful in other walks of life."

HARRIET TOWNSEND,
Teachers College.

Handbook of Social Resources of the United States. By GENEVIEVE POYNEER HENDRICKS. Washington: American Red Cross, 1921, pp. 300. $1.00.

This handbook was compiled to furnish Red Cross workers with information regarding national social agencies in the United States. It does not include associations whose work is confined to local interests or to war time service. Inclusion in the book does not imply endorsement of purpose or methods, nor does omission imply disapproval.

"Endeavor has been made to include for each organization mention of its general program; its specific activities; the annual meeting, and whether it is open to the public; the names and work of special and standing committees and commissions; field work and lecture service, to whom available and on what terms; information service and clearing house work, and how this service may be secured; references and library facilities; survey and investigational activities."

The 371 organizations and institutions described appear in alphabetical order, but they may be located by consulting the subject index or the locality index. The loose leaf form allows for the insertion of additional agencies or information.

While this book was intended for the use of Red Cross workers it will be found extremely useful to any member of a national organization interested in coöperating with other organizations.

PAMPHLETS RECEIVED

Issued by the U. S. Department of Agriculture:
Chimneys and Fireplaces. Farmer's Bulletin 1230.
Food Values: How Foods Meet Body Needs. By E. A. Winslow. Farmer's Bulletin 975.
An Improved Method of Making Sugar Beet Sirup. By C. O. Townsend. Farmer's Bulletin 1241.
The Paper Dress Form. Circular 207.
A Week's Food for an Average Family. By C. L. Hunt. Farmer's Bulletin 1228.

Issued by the U. S. Department of Commerce, Bureau of Census:
Cotton Production and Distribution, Season of 1920–1921. Bulletin 147.

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NEWS FROM THE FIELD

THE HOME ECONOMICS SPECIAL

Chicago to Corvallis, July 26–31, 1922

Annual Meeting, August 1–5, 1922

Summer Tourist round trip fare, Chicago to Portland	$86.00
Lower berth, Chicago to Portland, as per schedule	24.75
Approximate expense of meals in dining car en route	12.00
The complete two-day tour in Glacier Park	26.25
Total	$149.00

The upper berth rate, Chicago to Portland	$19.80
Drawing room, accommodating three to five people	87.00
Compartment, accommodating two to four people	69.50
Railroad fare Portland to Corvallis (one-way)	3.17

Round trip fare, Chicago to Portland, returning via California..... $104.00

The route from Chicago is via the C. B. & Q. to St. Paul and the Great Northern, St. Paul to Portland. Members should make sure that tickets read accordingly, as this is the route of our *Special Train*. Tickets may be purchased at any point.

Schedule. Leave Chicago 10 a.m. July 26; leave St. Paul 10:45 p.m. same day; arrive Glacier Park 8 a.m. July 28; leave Glacier Park 8 p.m. July 29; arrive Portland 7:45 a.m. July 31. The full schedule appeared on page 152 of the March JOURNAL.

The departure from Chicago, 10:00 a.m., will allow ample time for members coming from the south and southeast to make connections at Chicago. Members from Kansas City and adjacent points, from St. Louis and points south should have their tickets routed via their direct line to St. Paul, and the Great Northern to Portland. They should arrange to arrive in St. Paul in ample time to connect with our *Special Train*, leaving St. Paul at 10:45 p.m. July 26. Those who cannot join the special should arrive in Portland in time for the tour of the city starting 9:30 a.m., July 31.

Return Routes. The return routes must be definitely decided upon before purchasing round trip tickets. Stopovers are permitted at all points on the return trip. Application for stopover is made to the conductor of the train. Railroads will arrange for special cars where a sufficient number wish to return by the same route. The Great Northern and the Northern Pacific are the lines between Corvallis and Portland. From Portland, one may have the choice of the following routes:

1. S. P. & S. to Spokane via north bank of Columbia River, Northern Pacific to St. Paul, Burlington Route to Chicago; or, from Spokane, the Northern Pacific to Billings, Burlington to Chicago via Denver, with free side trip to Colorado Springs, if desired.

2. Union Pacific to Ogden, D. & R. G. via Salt Lake City through the Royal Gorge, the Canyon of the Grand, and Colorado Springs to Denver, Burlington Route to Chicago. Side trip may be made from Salt Lake City or Ogden to Yellowstone Park in connection with the above route.

3. Canadian Pacific S. S. Co. to Victoria, thence Vancover, Canadian Pacific, M. St. P. & S. S. M. to St. Paul through Canadian Rockies, Burlington Route to Chicago.

4. Southern Pacific to San Francisco, Western Pacific to Salt Lake City through Feather River Canyon, D. & R. G. through the Royal Gorge, the Canyon of the Grand, and Colorado Springs to Denver, C. B. & Q. to Chicago; or, from San Francisco, Southern Pacific to Los Angeles, Union Pacific to Salt Lake City, D. & R. G. through the Royal Gorge, Canyon of the Grand, and Colorado Springs to Denver, C. B. & Q. to Chicago; or, from Los Angeles, Santa Fe to Chicago. If Grand Canyon side trip is desired, on the return trip via the Santa Fe, add $9.12.

Note: Tickets reading C. B. & Q. Denver to Chicago, are honored either via Omaha or Kansas City to Chicago.

5. "Columbia River Route"—Direct from Portland to Chicago, via Union Pacific System and C. & N. W. through Hood River, Pocatello, Cheyenne, Omaha. Side trip may be made from Pocatello to Yellowstone Park.

6. "Overland Limited Route"—Southern Pacific to San Francisco. From San Francisco direct to Chicago, via Southern Pacific, Union Pacific and C. & N. W., through Reno, Ogden, Cheyenne, and Omaha.

7. "Los Angeles Limited Route"—S. P. to Los Angeles. From Los Angeles direct to Chicago, via Union Pacific, C. & N. W. through Salt Lake City, Ogden, Cheyenne, and Omaha.

Note: On any of the above routes, tickets can be purchased to return from Ogden via D. & R. G. through Salt Lake City, Glenwood Springs, Colorado Springs, Denver, thence to Chicago via Union Pacific and C. & N. W. or via Kansas City and C. M. & St. P. at the same rate.

8. O.-W. R. & N. to Seattle, Seattle to Chicago, C. M. & St. P. via the famous Olympian train which for 649 miles is handled by electric locomotives.

9. Union Pacific, Great Northern, or Northern Pacific, to Seattle, Seattle to Victoria via C. P. R. Princess Steamer, Victoria to Lake Louise and Banff, through Canadian Rockies; thence to Minneapolis; Minneapolis to Chicago via the Soo Line. There are three variations of this trip with different stopovers from which to choose.

10. S. P. to Los Angeles, Los Angeles to Chicago on the California Limited of the Atchison, Topeka, and Santa Fe with a schedule arranged for a twelve hour day-light stopover at Grand Canyon.

Detailed itineraries of any of these routes will be sent upon request.

Do not hesitate about making plans to go because you "hate to go alone." You will become acquainted as soon as you are on the train, as each car will have a hostess—your car might have one from the starting point.

Assignments in cars will be made in the order in which requests for reservations are received. Return postal cards will be sent for this purpose to all members of the Association. Others may make their reservations by communicating directly with Nina Streeter, Chairman Travel Committee, 1370 East 54th Street, Chicago, Ill.

ALABAMA

The County Home Demonstration Agents of Alabama spent the month of January in special training at the Alabama Polytechnic Institute, Auburn, under the instruction of Helen Green, Head of the Home Economics Department. The course of study was largely of the productive nature, but so far as was practical other divisions of the work were covered. Aside from their work in home economics they took special training in horticulture, poultry, auto mechanics, and beekeeping.

This was the longest course of special training ever provided for the home demonstration agents of Alabama. Incidentally, this is the first year for the Alabama Polytechnic Institute to have a Department of Home Economics.

CONNECTICUT

The Connecticut Home Economics Association held its annual meeting Saturday, February 4, 1922, at the New Haven High School. After an address by Dr. David Snedden and the discussion of affiiliation led by Agnes Craig, a luncheon was served at the Business and Professional Woman's Club. The afternoon program was as follows: Clothing Discussion led by Mrs. Bessie Birdsall, Connecticut Agricultural College; Nutrition Program, Mrs. Amy D. Storer, American Red Cross; Foods for the Foreign Born, Bertha Wood, Boston Dispensary.

ILLINOIS

Child Health Class. The Health Class for children has become a regular part of the summer program of the Home Economics Department of the University of Chicago. For the past two summers a group of underweight children has served as a demonstration class for teaching home economics students and teachers how to conduct nutrition classes for children. This year in addition to this usual course, a special course dealing with nutrition in the public school program will be offered for superintendents, principals, and teachers in connection with this Health Class.

IOWA

The Des Moines Salary Schedule. For the purpose of attracting strong, capable people in the teaching profession, Des Moines, Iowa, has advanced a salary schedule of much interest.

The plan provides for four classifications based upon training and experience. It also affords a definite annual increment for each classification. With an approved, full-time teaching experience of two years, the minimum salary paid to teachers in Class I is $1200. The maximum in Class IV covering a period of ten years teaching experience with five years of preparation is $3000. Not more than five years of full-time teaching experience commensurate with the Des Moines standard may be accepted on initial appointment. Some of the outstanding features are the recognition of professional study whereby, with each added year of study, one may raise his classification to his financial benefit, and equal salary for equal qualifications, irrespective of grade or school.

All teachers of Home Economics interested in advancement should write for detailed information concerning the plan.

MICHIGAN

The Ellen H. Richards Club of Southeastern High School, Detroit, has had a very busy season. The initial feature of an extensive program was a mass meeting held in the school auditorium, in December, in honor of Mrs. Richards' Birthday. All girls of the ninth, tenth, and eleventh grades were invited to attend. Talks by various members of the Club were followed by an address by Grace McAdam, Supervisor of Home Economics in the Detroit Public Schools, on the life of Mrs. Richards, and the benefits of home economics. This mass meeting aroused a great interest among the girls of the school, and many enrolled in the home science course for the following semester.

A few weeks later the Ellen H. Richards Club, with the cooperation of all the clubs in the school, arranged to have Mrs. Emma A. Fox, Michigan parliamentarian, give a talk on Parliamentary Usage. Tea was served in the Ellen H. Richards dining room.

The club is now organizing a Federation comprised of two members from each club in the school for the purpose of maintaining closer relationship and coordinating various activities for the good of the school.

The Dietetic Association of Southeastern Michigan held a dinner on March 2 at the College Club, Detroit. Rena S. Eckman of the University Hospital, Ann Arbor, gave a paper on "The Responsibilities of the Dietitian." Miss Eckman emphasized particularly the responsibility of the dietitian to her profession as well as to the institution with which she is associated.

Recent publications and books were shown and discussed by Miss Wilson of Cass Technical High School, Detroit.

The next meeting will be the annual election of officers.

MONTANA

The Montana Home Economics Association held its second annual meeting at Great Falls. The Montana association with a membership of sixty-six was the second state organization to affiliate with the American Home Economics Association. The association pledged $100 toward the executive secretary fund. Blanche Lee, Assistant State Leader of Home Demonstration Agents, was elected Montana representative on the National Council. Gladys Branegan's term as president of the State Association continues for another year, and the membership goal for this year is one hundred.

Mildred Weigley on her recent trip in the interests of the American Home Economics Association visited the Home Economics Departments at Montana University and Montana State College. She met a representative group of home economics workers and students in both places.

Isabel Bevier was the chief speaker on the women's program of the State Farmers' and Homemakers' Conference held at the Montana State College, the second week in January.

NEW YORK

The Home Economics Association of Greater New York held its March meeting in conjunction with the New York Dietitians Association. The program, arranged by the institutional group, consisted of discussions on various institutional subjects by Mary Lindsley, who presided, Mrs. Katherine Ogden, Margaret Proctor, and Mrs. Bryan.

Auburn Home Economics Teachers. A local group of home economics teachers have been meeting together twice a year for three years, either at Auburn or Syracuse and have invited all interested home economics workers from nearby towns. These meetings have been most helpful to the workers who are more or less isolated from others doing the same work. A chairman is appointed at each meeting who names a committee for the next. A ten cent tax is collected to defray expenses.

The gatherings usually take the form of an experience meeting around a long table. February third the meeting was held in the Vocational High School, Syracuse. Our newly appointed State Supervisor, Emma Conley, gave an informal talk. Edith Barber, Home Bureau agent of Syracuse, told about the work being done by the Bureau in Syracuse.

Clothing for Unemployed. During the past year, girls in the Washington Irving, Julia Richman, and Wadleigh High Schools, N. Y. City, have made 2600 articles of clothing for the children of unemployed ex-service men. The work has been done under the direction of the New York County Chapter of the Red Cross.

A Course in Family Social Work for Teachers of Household Arts is offered by the School of Practical Arts of Teachers College, June 5 to 30, 1922 for selected women with training in household arts. Application for admission must be made to Miss Harriet Towsend, Teachers College, before May 5.

Annual Alumni Reunion at Teachers College. The alumni of Teachers College held their annual reunion and conferences at the college February 10 and 11. The keynote of the meeting was "citizenship," and each section included in its programs a discussion of its work in citizen making.

The Household Arts Section took for its first meeting the topic, Some Problems of the Housewife. Under the chairmanship of Dr. Andrews the problems were discussed by May Van Arsdale, Dr. Hugh Hartshorne, Mrs. Henry S. Patterson, and ten housewives. It is hoped that by having one special meeting for the housewives the married alumnae will return to give their experiences and to make suggestions as to how the college can be of help to them.

The evening meeting under the chairmanship of Anna M. Cooley had as its general topic, Recent Investigations in the Field of Household Arts. Dr. Minna C. Denton, of the Office of Home Economics U. S. Dept. of Agriculture reported current research

throughout the country. Each department of the school of practical arts told of researches being conducted in Teachers College. Ruth Wilmot, formerly an instructor at the college and now connected with a New York department store discussed the relation of art to daily life. Dr. M. R. Trabue outlined the development of educational measurements.

The topic for the final meeting, Home Economics and Citizenship, was discussed by Dr. Maurice A. Bigelow, Director of the School of Practical Arts, Teachers College; Dr. Albert Shiels, Assistant Director of the Field Studies Division, Institute of Educational Research, Teachers College; Philip W. L. Cox, Headmaster, The Washington School of New York; and Esther Jonas, Instructor in Home Economics, Junior High School, Washington, D. C.

TEXAS

The College of Industrial Arts, the State College for Women, at Denton, Texas, is offering special courses in home econimics during its summer quarter June 6 to August 25. Margaret Gleason, B.S. University of Chicago, and M.A. University of California, is the director of the home economics department, which has a faculty of 22 and gives instruction to more than 1200 students annually.

UTAH

Home Economics Workers in Utah will not soon forget the delightful visit they had with Mildred Weigley in December. Miss Weigley addressed a meeting of the women of the University of Utah, Salt Lake City, a group of teachers at the L.D.S. University in the same city, and the home economics faculty and student body at the College of Agriculture, Logan.

Two distinct benefits attach to Miss Weigley's visit. First, the coming of this council member of the American Home Ecnomics Association gave that organization a personality and thus formed a vital beginning of the acquaintance of Utah students with their national professional organization. Second, Miss Weigley's comprehensive presentation of the organization's character, its recognition by other organizations, opportunities for growth and service especially through the proper emphasis upon home making as a profession and the enlistment of the interest and support of the home makers along with that of home economics workers in other fields, stimulated interest in the cause of the Association among the people of Utah.

THE UNITED STATES DEPARTMENT OF AGRICULTURE

The Coöperative Extension Work in agriculture and home economics, formerly conducted through two extension offices, one for 15 Southern States and the other for 33 Northern and Western States, is now under the direction of one office. For the coming year the county agent activities, home demonstration work, and club work with farm boys and girls will all be part of a unified program.

Depressed economic conditions in the southern states lead the 861 white county agents and the 154 negro agents to give an unusual amount of time to marketing problems, assisting in the organization of 2,031 coöperative associations for buying and selling. These agents reported 230,819 field demonstrations with crops by adult farmers and boys on 2,274,534 acres. The home-demonstration workers employed in 567 counties reported that, due to the work of 240,000 club girls and women, over 14,000,000 pounds of meat products were cured, 228,500 cans of meat were conserved, and 14,500,000 quarts of vegetables and fruits were canned, besides a large quantity of jelly and other preserves, and dried and brined products. Poultry and eggs valued at $2,500,000 were produced, and over 3,000 family cows were placed on farms.

In the northern and western states home demonstration projects were conducted in 17,399 communities, and over 1,330,000 people were reached. The total enrollment in boys' and girls' club work was 216,479. The agricultural colleges offered 730 scholarships and conducted short courses for 3,383 boys and girls. Significant of the way in which club work stimulates a desire for more instruction is the fact that over

1,800 former club members were enrolled during 1920 in the four-year courses in agriculture or home economics at various agricultural colleges.

The Office of Home Economics has increased its experimental work on food value and selection, meal planning, food requirements of children, cooking and canning processes, and relative efficiency of different fuels in food preparation. Some studies were also made on the selection, repair, and care of clothing and household equipment.

The Experiment Stations in Alaska and the insular possessions have continued the work for diversification of agriculture in their respective territories.

NOTES

Inga M. K. Allison, Head of the Department of Home Economics, Colorado State Agricultural College, has been appointed Acting Supervisor of Vocational Home Economics for the state.

Mrs. Bessie W. Birdsall, formerly of Kansas State College, is Head of the Department of Clothing and Textiles at the Connecticut Agricultural College.

Marion Butters, formerly Assistant State Leader in New Hampshire, has been appointed State Home Demonstration Leader, New Brunswick, New Jersey.

Mrs. Henrietta W. Calvin, Specialist in Home Economics, Bureau of Education, has been conducting a series of conferences for home economics city supervisors and teachers in Spokane, Portland, San Francisco, Los Angeles, and Salt Lake City. Others will be held in Denver May 5 and 6, and Kansas City, Mo., May 12 and 13.

Esther Deutch (1921 Iowa State College) has been appointed assistant manager of the new cafeteria in the Hotel Statler in Cleveland.

Jean MacKinnon has accepted a position as Head of the Department of Foods and Cookery at the Connecticut Agricultural College.

Ella Rose, formerly Head of the Foods and Cookery Department at the Connecticut Agricultural College, has been made supervisor of Smith-Hughes teacher training work and instructor in Smith-Hughes methods in teacher-training at the College.

Miss Roudelbush, Director of the Department of Home Economics, State Teachers College, Greeley, Colorado, has been elected President of the Home Economics Section of the State Teachers Association.

Anna Williams, formerly of theUniversity of Illinois, is now in charge of the Home Economics work at Colorado State University.

FOREIGN

The American Women's Hospitals, organized by the Medical Women's National Association in the early part of the war, have done remarkable work in the war striken countries as indicated in the following summary:

France. Three hospital centers, with dispensaries, out-patient dental service conducted in the war zone prior and subsequent to the Armistice. Over 22,000 sick people cared for; between 800 and 900 surgical operations performed; helped establish permanent maternity hospital at Blois and permanent dispensary at Levallois-Perret.

Serbia. Five hospital centers conducted in Serbia during the last two years. Training classes for Serbian nurses maintained; over 90,000 consultations recorded; a large number of surgical operations performed; eye clinics conducted; over four hundred neglected cases of cataract operated upon and sight restored to people who had been blind for years.

Asia Minor. All hospital, dispensary, medical, and surgical work in the Derindje, Bardizag, and Ismid regions for the past year—general hospital, children's hospital, trachoma hospital, small-pox and tuberculosis camps with training classes for native nurses. This district was the recent battlefield of the Greeks and the Kemalists.

Russian Caucasus. Children's hospital, general hospital, trachoma hospital, and a hospital for skin diseases, all overcrowded.